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EXAMINER	
KRUSE, DAVID H	
ART UNIT	**PAPER NUMBER**
1638	

DATE MAILED: 01/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/934,455	ADAM ET AL.	
	Examiner	Art Unit	
	David H Kruse	1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9,11,13,14,16,18-25,27,29-44 and 48-70* is/are pending in the application.

4a) Of the above claim(s) *6,34-43 and 48-70* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-9,11,13,14,16,18-25, 27, 29-33 and 44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *6/02,11/03* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I, claims 1-33 and 44-47, and SEQ ID NO: 5 and 6 in the response filed 27 October 2003 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

2. Claims 6, 34-43 and 48-70 are withdrawn from further consideration pursuant to 37 CFR § 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the response filed 27 October 2003. Applicant should note that claim 6 has been withdrawn from further consideration because this claim should have been included in Group II as directed to an isolated or recombinant polypeptide.

3. Claims 10, 12, 15, 17, 26, 28 and 45-47 have been cancelled.

4. This application contains claims 6, 34-43 and 48-70 drawn to an invention nonelected without traverse in the response filed 27 October 2003. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR § 1.144) See MPEP § 821.01.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR § 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be

accompanied by a request under 37 CFR § 1.48(b) and by the fee required under 37 CFR § 1.17(i).

Priority

6. Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. § 120 as follows:

An application in which the benefits of an earlier application are desired must contain a specific reference to the prior application(s) in the first sentence of the specification or in an application data sheet (37 CFR § 1.78(a)(2) and (a)(5)). The specific reference to any prior nonprovisional application must include the relationship (i.e., continuation, divisional, or continuation-in-part) between the applications except when the reference is to a prior application of a CPA assigned the same application number. The claim of priority on page 1, paragraph 0001 of the specification is incomplete and must be amended. Applicant should also include the status of any non-provisional US Patent Applications in this section.

7. Applicant's claim for domestic priority under 35 U.S.C. § 119(e) is acknowledged. However, the provisional application upon which priority is claimed fails to provide adequate support under 35 U.S.C. § 112 for claims 1-5, 7-9, 11, 13, 14, 16, 18-25, 27, 29-33 and 44 of this application as amended on 27 October 2003. In the instant case, US Provisional Application 60/227,439 fails to provide adequate written description support for SEQ ID NO: 5 and 6, GID G1792.Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. § 120 as follows:

In addition, the later-filed application must be an application for a patent for an invention which is also disclosed in the prior application (the parent or original nonprovisional application or provisional application); the disclosure of the invention in the parent application and in the later-filed application must be sufficient to comply with the requirements of the first paragraph of 35 U.S.C. 112. See *Transco Products, Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 32 USPQ2d 1077 (Fed. Cir. 1994). In the instant case, copending US Patent Applications 09/713,994, filed 16 November 2000, and 09/837,944, filed 18 April 2001, do not appear to disclose SEQ ID NO: 5 and 6, the elected invention. Consequently the instant application is given the effective US filing date of 22 August 2001 for the purposes of applying the prior art.

Information Disclosure Statement

9. The information disclosure statements filed 25 July 2002 and 6 November 2003 have been considered, a signed copy is attached hereto.

Specification

10. The specification is objected to because incorporation of essential material in the specification by reference to a foreign application or patent, or to a publication is improper. Applicant is required to amend the disclosure to include the material incorporated by reference. The amendment must be accompanied by an affidavit or declaration executed by the applicant, or a practitioner representing the applicant, stating that the amendatory material consists of the same material incorporated by reference in the referencing application. See *In re Hawkins*, 486 F.2d 569, 179 USPQ 157 (CCPA 1973); *In re Hawkins*, 486 F.2d 579, 179 USPQ 163 (CCPA 1973); and *In re*

Hawkins, 486 F.2d 577, 179 USPQ 167 (CCPA 1973). See page 67, paragraph 0217 of the specification.

11. The abstract of the disclosure is objected to because it is not directed to the elected subject matter. Correction is required. See MPEP § 608.01(b).

12. The disclosure is objected to because of the following informalities: The apparent typographical error "onme" at page 4, paragraph 0013, line 6 must be corrected by Applicant.

Appropriate correction is required.

Claim Objections

13. Claims 1, 3, 4, 5, 7, 18-23 29-33 are objected to because of the following informalities:

At claim 1(b), "of a polypeptide" should read -- of the polypeptide --.

At claim 1(d), "in a nucleotide" should read -- in the nucleotide --.

At claim 1(e), "under stringent" should read -- under the stringent --, and "to a nucleotide" should read -- to the nucleotide --.

At claim 1(h)-(j), "to a nucleotide" should read -- to the nucleotide --.

At claim 1(k)-(r), "of a conserved domain" should read -- of the conserved domain -- because SEQ ID NO: 6 is taught as only having one conserved domain.

At claim 1(k)-(n), line 2, "an amino" should read -- the amino --.

At claim 1(u), -- and -- should be inserted after ";"

At claim 3, lines 1-2, "the following group" should read -- from the group consisting of -- for proper Markush format.

At claim 4(b), "of a polypeptide" should read -- of the polypeptide --.

At claim 4(d), "in a nucleotide" should read -- in the nucleotide --.

At claim 4(e), "under stringent" should read -- under the stringent --, and "to a nucleotide" should read -- to the nucleotide --.

At claim 4(h)-(j), "to a nucleotide" should read -- to the nucleotide --.

At claim 4(k)-(r), "of a conserved domain" should read -- of the conserved domain -- because SEQ ID NO: 6 is taught as only having one conserved domain.

At claim 4(k)-(n), line 2, "an amino" should read -- the amino --.

At claim 5, line 2, "nucleotide" should be deleted as redundant.

At claim 7, lines 4-5, "selecting for a modified trait" should read -- selecting a plant having a modified trait -- to agree with the preamble of the claim.

At claims 18-22, "A plant" should read -- A plant comprising said isolated or recombinant polynucleotide --.

At claim 23, line 5, "selecting for a modified trait" should read -- selecting a plant having a modified trait -- to agree with the preamble of the claim.

At claims 29-33, "A plant" should read -- A plant comprising said isolated or recombinant polynucleotide --.

Appropriate correction is required.

14. Claims 20, 22, 31 and 33 are objected to because of the following informalities: The instant claims are dependent upon cancelled claims. Appropriate correction is required.

Claim Rejections - 35 USC § 112

15. The following is a quotation of the second paragraph of 35 U.S.C. § 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

16. Claim 2 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

At claim 2, line 2, "recombinant nucleotide" lacks proper antecedent basis in claim 1 and should read -- recombinant polynucleotide --. Appropriate correction is required.

17. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

18. Claims 1-5, 7-9, 11, 13, 14, 16, 18-25, 27 and 29-33 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicant claims polynucleotide having a nucleotide sequence that hybridizes under specific stringency conditions, comprises at least 15 consecutive nucleotides outside of a conserved domain of said polynucleotide, a subsequence or fragment of said polynucleotide, a polynucleotide having at least 31-95% sequence identity to said

polynucleotide, a polynucleotide encoding a polypeptide having at least 31-95% sequence identity outside of the conserved domain of a polypeptide having the amino acid sequence of SEQ ID NO: 6, a polynucleotide encoding a polypeptide having an amino acid domain at least 86-98% identical to the conserved domain of a polypeptide having the amino acid sequence of SEQ ID NO: 6, and a polynucleotide encoding a polypeptide having at least 31-95% sequence identity over the entire length of SEQ ID NO: 6. Applicant also claims methods of using said polynucleotide and transgenic plants comprising said polynucleotide wherein said plant possesses an altered trait, altered phenotype, or altered expression of one or more genes associated with a plant trait, as compared to a wild type or reference plant.

Applicant describes an isolated polynucleotide encoding the amino acid sequence of SEQ ID NO: 6 in SEQ ID NO: 5, and transgenic plants transformed therewith with altered phenotypes (see page 54 of the specification).

Applicant does not describe the plethora of other isolated or recombinant polynucleotides within the meaning of the claimed invention, or plants transformed therewith as broadly claimed.

Hence, it is unclear from the instant specification that Applicant was in possession of the invention as broadly claimed.

See *University of California V. Eli Lilly and Co.*, 43 USPQ2d 1398 (Fed. Cir. 1997), which teaches that the disclosure of a process for obtaining cDNA from a particular organism and the description of the encoded protein fail to provide an adequate written description of the actual cDNA from that organism which would

encode the protein from that organism, despite the disclosure of a cDNA encoding that protein from another organism. At 1406, the court states that a description of a genus of cDNAs may be achieved by means of a recitation of a representative number of cDNAs, defined by nucleotide sequence, falling within the scope of the genus or of a recitation of structural features common to the members of the genus, which features constitute a substantial portion of the genus.

See also, MPEP § 2163 which states that the claimed invention as a whole may not be adequately described where an invention is described solely in terms of a method of its making coupled with its function and there is no described or art-recognized correlation or relationship between the structure of the invention and its function. A biomolecule sequence described only by a functional characteristic, without any known or disclosed correlation between that function and the structure of the sequence, normally is not a sufficient identifying characteristic for written description purposes, even when accompanied by a method of obtaining the claimed sequence. In the instant case, the polypeptide described in SEQ ID NO: 6 does not adequately describe the genus of polynucleotides that when expressed in a transgenic plant alters the expression of a trait, even one as specific as alteration in the level of wax monomers as in claim 9, for example. Applicant only describes the claimed invention in terms of function in a transgenic plant, and does not describe a correlation between the function and the structure of the sequence.

19. Claims 1-5, 7-9, 11, 13, 14, 16, 18-25, 27 and 29-33 are rejected under 35 U.S.C. § 112, first paragraph, because the specification, while being enabling for an

isolated or recombinant polynucleotide encoding the amino acid sequence of SEQ ID NO: 6 and transgenic plants transformed therewith, does not reasonably provide enablement for polynucleotides having a nucleotide sequence that hybridizes under specific stringency conditions, comprises at least 15 consecutive nucleotides outside of a conserved domain of said polynucleotide, a subsequence or fragment of said polynucleotide, polynucleotides having at least 31-95% sequence identity to said polynucleotides, polynucleotides encoding a polypeptide having at least 31-95% sequence identity outside of the conserved domain of a polypeptide having the amino acid sequence of SEQ ID NO: 6, polynucleotides encoding a polypeptide having an amino acid domain at least 86-98% identical to the conserved domain of a polypeptide having the amino acid sequence of SEQ ID NO: 6, or polynucleotides encoding a polypeptide having at least 31-95% sequence identity over the entire length of SEQ ID NO: 6, method of using such polynucleotide or plants transformed therewith. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

Applicant claims polynucleotide having a nucleotide sequence that hybridizes under specific stringency conditions, comprises at least 15 consecutive nucleotides outside of a conserved domain of said polynucleotide, a subsequence or fragment of said polynucleotide, a polynucleotide having at least 31-95% sequence identity to said polynucleotide, a polynucleotide encoding a polypeptide having at least 31-95% sequence identity outside of the conserved domain of a polypeptide having the amino

acid sequence of SEQ ID NO: 6, a polynucleotide encoding a polypeptide having an amino acid domain at least 86-98% identical to the conserved domain of a polypeptide having the amino acid sequence of SEQ ID NO: 6, and a polynucleotide encoding a polypeptide having at least 31-95% sequence identity over the entire length of SEQ ID NO: 6. Applicant also claims methods of using said polynucleotide and transgenic plants comprising said polynucleotide wherein said plant possesses an altered trait, altered phenotype, or altered expression of one or more genes associated with a plant trait, as compared to a wild type or reference plant.

Applicant teaches an isolated polynucleotide encoding the amino acid sequence of SEQ ID NO: 6 in SEQ ID NO: 5, and transgenic plants transformed therewith with altered phenotypes (see page 54 of the specification).

Applicant does not teach the plethora of other isolated or recombinant polynucleotides within the meaning of the claimed invention, or plants transformed therewith as broadly claimed.

In re Wands, 858F.2d 731, 8 USPQ2d 1400 (Fed. Cir. 1988) lists eight considerations for determining whether or not undue experimentation would be necessary to practice an invention. These factors are: the quantity of experimentation necessary, the amount of direction or guidance presented, the presence or absence of working examples of the invention, the nature of the invention, the state of the prior art, the relative skill of those in the art, the predictability or unpredictability of the art, and the breadth of the claims.

Applicant has provided limited guidance on how to make and use the plethora of isolated or recombinant polynucleotides as broadly claimed. The specification gives only limited guidance as to what "plant trait" is "modified" in transgenic *Arabidopsis thaliana* plants transformed with the disclosed polynucleotide, specifically a polynucleotide having the nucleotide sequence of SEQ ID NO: 5. Applicant provides no guidance as to what special or specific properties the transcription factor encoded by SEQ ID NO: 5 has that enables said transcription factor to modify a specific plant trait, only that it appears to act as transcription factor. Applicant only provides examples directed to transgenic plants transformed with a homologous polynucleotide sequence, applicant does not provide examples of heterologous plants transformed with the disclosed polynucleotide or what plant traits are modified in heterologous plants by the exemplified transcription factor. The art teaches that equivalent or similar biological functions can be controlled by different families of transcription factors and that DNA binding domains that are found in all three eukaryotic kingdoms often control different functions in each one (see Riechmann *et al* 2000, Science Vol.290, pages 2105-2110, in particular page 2109, left column, last paragraph). A cursory examination of the amino acid sequence of SEQ ID NO: 6 suggests that said amino acid sequence is that of an EREBP transcription factor, as it contains both the YRG and RAYD elements as taught by Reichmann and Meyerowitz (1998, Biological Chemistry 379:633-646, see especially page 636, Figure 3). Reichmann and Meyerowitz teach that EREBP transcription factors might be postranscriptionally regulated, requiring other factors within the plant for function, and that additional functional specificity might arise from the

diversity of activation domains that the EREBP proteins exhibit (see page 643). Cao *et al* (2001, Biochemistry (Moscow) 66(6):623-627) teach that it is unpredictable when changing even a single amino acid in a conserved region of a EREBP transcription factor if the function of the protein will be changed or not without a reduction to practice (see the Abstract on page 623). Hence, given the limited teachings and guidance by Applicant, the nature of the art and the teachings of the art, it would have required undue trial and error experimentation by one of skill in the art at the time of Applicant's invention to screen through a myriad of polynucleotides comprising the claimed nucleotide sequences that encode a polypeptide that when used to transform a plant wherein said plant possesses an altered trait, altered phenotype, or altered expression of one or more genes associated with a plant trait as broadly claimed.

See *In re Fisher*, 166 USPQ 18, 24 (CCPA 1970) which teaches "That paragraph (35 USC 112, first) requires that the scope of the claims must bear a reasonable correlation to the scope of enablement provided by the specification to persons of ordinary skill in the art. In cases involving predictable factors, such as mechanical or electrical elements, a single embodiment provides broad enablement in the sense that, once imagined, other embodiments can be made without difficulty and their performance characteristics predicted by resort to known scientific laws. In cases involving unpredictable factors, such as most chemical reactions and physiological activity, the scope of enablement obviously varies inversely with the degree of unpredictability of the factors involved.".

Claim Rejections - 35 USC § 102

20. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

21. Claims 1-5, 7, 8, 11, 13, 16, 18 and 21 are rejected under 35 U.S.C. § 102(b) as being anticipated by Liu *et al* 1998 (The Plant Cell 10:1391-1406).

At claims 1(g) and 4(g), the limitation "a nucleotide sequence comprising a subsequence or fragment which subsequence or fragment encodes a polypeptide that modifies one or more of a plant's traits" has been read in its broadest sense. As such, the instant claims read on any EREBP transcription factor encoding polynucleotide, plants transformed therewith and methods of using such a polynucleotide.

Liu *et al* disclose isolated polynucleotides encoding DREB1 and DREB2, which are discloses as EREBP type transcription factors from *Arabidopsis thaliana* (see Figure 3 on page 1395). Liu *et al* disclose that expression of these polynucleotides are influenced by low temperature (DREB1) and high salt (DREB2) in Figure 6 on page 1398. Liu *et al* disclose transgenic plants transformed with said polynucleotides operably linked to a constitutive 35S promoter sequence and a method of using said polynucleotides to overexpress the polypeptide and produce a modified plant with a modified trait (pages 1396-1397). Liu *et al* disclose that plants transformed with the DREB1 polynucleotide exhibit tolerance to drought and freezing (see page 1398). Liu *et al* disclose that plants transformed with the DREB1 polynucleotide showed growth

retardation, hence delayed flowering time. The transgenic plants listed in Applicant's claim 3 would have been considered functional equivalents to the *Arabidopsis* disclosed by Liu *et al*. Hence, Liu *et al* have previously disclosed all of the claim limitations.

22. Claims 4 and 44 are rejected under 35 U.S.C. § 102(b) as being anticipated by Sato *et al* (Genbank Accession No AB025608, published 20 April 1999).

Sato *et al* disclose an isolated polynucleotide comprising the nucleic acid sequence of Applicant's SEQ ID NO: 5 at nucleotides 48,408 to 48,827, that encodes the amino acid sequence of Applicant's SEQ ID NO: 6. Hence, all of the claim limitations have been previously disclosed by Sato *et al*.

Claim Rejections - 35 USC § 103

23. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

24. Claims 23, 24, 27, 29 and 32 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Liu *et al* 1998 (The Plant Cell 10:1391-1406).

At claims 1(g) and 4(g), the limitation "a nucleotide sequence comprising a subsequence or fragment which subsequence or fragment encodes a polypeptide that modifies one or more of a plant's traits" has been read in its broadest sense. As such, the instant claims read on any EREBP transcription factor encoding polynucleotide, plants transformed therewith and methods of using such a polynucleotide.

The teachings of Liu *et al* are outlined supra.

Liu *et al* do not teach a method of using an antisense encoding polynucleotide to transform a plant to modify a trait.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Liu *et al*, to transform an *Arabidopsis* plant with an antisense of the DREB1 encoding polynucleotide to produce a plant with a modified trait. Liu *et al* teach that DREB1 is involved in tolerance to chilling and drought, and that overexpression modifies flowering time. Hence, one of ordinary skill in the art at the time of Applicant's invention would have been motivated to introduce an antisense of the DREB1 polynucleotide into the homologous plant to modify a trait. In addition, one of ordinary skill in the art would have had a reasonable expectation of modifying tolerance to freezing and/or drought in said transformed plant.

25. Claims 1, 2, 3, 5, 7, 9, 14, 19, 20, 22, 23, 25, 30, 32 and 33 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Liu *et al* 1998 (The Plant Cell 10:1391-1406) in view of Sato *et al* (Genbank Accession No AB025608, published 27 December 2000, and submitted 2 April 1999).

The teachings of Liu *et al* are outlined supra.

Liu *et al* does not teach a polynucleotide having the nucleic acid sequence of SEQ ID NO: 5 or that encodes the amino acid sequence of SEQ ID NO: 6.

Sato *et al* teach a polynucleotide having the nucleic acid sequence of SEQ ID NO: 5 or that encodes the amino acid sequence of SEQ ID NO: 6.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of Applicant's inventions to modify the teachings of Liu *et al*, to substitute the

polynucleotide encoding the DREB1 transcription factor with the polynucleotide encoding the EREBP-3-like protein taught by Sato *et al.* It was well know to one of ordinary skill in the art at the time of Applicant's invention that EREBP proteins modify plant traits when expressed, and it was also well know that transforming a plant with a homologous antisense construct would suppress expression of the homologous protein and thus prevent it's function in producing a trait *per se*, and thus modifying said trait as compared to a wild type plant. Given the teachings of Liu *et al* in transforming plants with EREBP protein encoding polynucleotides and Sato *et al* of a EREBP-3-like protein encoding polynucleotide from *Arabidopsis*, one of ordinary skill in the art would have had a reasonable expectation of success in modifying a plant trait by transforming a plant with the polynucleotide taught by Sato *et al.* In addition, the transformed plants would inherently have the properties at claims 9, 14, 19, 20, 22, 25, 30, 32 and 33.

Double Patenting

26. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

27. Claims 1-5, 7-9, 11, 13, 14, 16, 18, 19, 21, 23-25, 27, 29, 30, 32 and 44 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3, 12, 26, 39-43, 52-57, 62, 63, 65 and 66 of copending Application No. 10/225,068. Although the conflicting claims are not identical, they are not patentably distinct from each other because the elected polynucleotide having the nucleic acid sequence of SEQ ID NO: 5 encoding a polypeptide having the amino acid sequence of SEQ ID NO: 6 in the instant application is identical to the polynucleotide having the nucleic acid sequence of SEQ ID NO: 45 encoding a polypeptide having the amino acid sequence of SEQ ID NO: 46 in the copending application. Claim 43 of the copending application claims an isolated or recombinant polynucleotide that hybridizes under stringent conditions to the nucleic acid sequence of SEQ ID NO: 25, 81, 23 or 239, but said claim does not set forth any conditions for stringent conditions and thus is deemed to read on claim 4 of the instant application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

28. Claims 1-5, 7-9, 11, 13, 14, 16, 18, 19, 21, 23-25, 27, 29, 30, 32 and 44 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-5, 7-11, 30-32, 61, 67, 72, 73 and 90-100 of copending Application No. 10/374,780. Although the conflicting claims are not identical, they are not patentably distinct from each other because the elected polynucleotide having the nucleic acid sequence of SEQ ID NO: 5 encoding a

polypeptide having the amino acid sequence of SEQ ID NO: 6 in the instant application is identical to the polynucleotide having the nucleic acid sequence of SEQ ID NO: 331 encoding a polypeptide having the amino acid sequence of SEQ ID NO: 332 in the copending application. The isolated polynucleotide of claim 4 of the instant specification would be obvious in view of the expression cassette of claim 92 of the copending application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

29. Claims 1-5, 7-9, 11, 13, 14, 16, 18, 19, 21, 23-25, 27, 29, 30, 32 and 44 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-14, 17, 18 and 19 of copending Application No. 10/666,642. Although the conflicting claims are not identical, they are not patentably distinct from each other because the elected polynucleotide having the nucleic acid sequence of SEQ ID NO: 5 encoding a polypeptide having the amino acid sequence of SEQ ID NO: 6 in the instant application is identical to the polynucleotide having the nucleic acid sequence of SEQ ID NO: 277 encoding a polypeptide having the amino acid sequence of SEQ ID NO: 278 in the copending application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

30. No claims are allowed.

31. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David H. Kruse, Ph.D. whose telephone number is (571) 272-0799. The examiner can normally be reached on Monday to Friday from 8:00 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Amy Nelson can be reached at (571) 272-0804. The fax telephone number for this Group is (703) 872-9306 Before Final or (703) 872-9307 After Final.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group Receptionist whose telephone number is (703) 308-0196.

David H. Kruse, Ph.D.
26 January 2004